

# SEX AND THE ANGIOSPERMS

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Discussed in this essay is the almost universal application of sexual terminology to sporophytic structures of angiosperms. Sex in plants was not well understood until the latter part of the 19th century. Prior to that time, the use of sexual terminology in botany was conjectural—and was not noted for unflinching accuracy. Its misuse then does not justify its misuse now. Sexuality in plants, as it applies to alternation of generations, is well understood today; sexual terminology should be restricted to plants and plant structures that are morphologically sexual.

The use—rather, misuse—of sexual terminology for sporophytic structures of angiosperms has long been rife with botanists. As a starting point for discussion, however, we might select the Linnaean “Sexual System,” a product of fanciful analogy between vegetable and man<sup>1</sup> and of an era antedating factual knowledge of sex in plants. This system is now of historical interest only except for its attribution of sex to sporophytes, a concept to which, even in the enlightened 1970’s, many botanists tenaciously cling.

Among the lower embryophytes—the bryophytes and pteridophytes—the use of terms indicative of sex is confined to the gametophytic phase. Thus, for example, we speak of a gametophyte as being male, female, or bisexual (hermaphroditic); we speak of an antheridium as being a male structure, of an archegonium as being a female structure. Among these plants, we do not apply sexual terms to the sporophytic phase.

Such restriction of sexual terminology to gametophytes is not the case, however, with the angiosperms. Not only is the gametophytic phase described with sexual terminology—e.g., the embryo sac is female—but, by an astonishing extension of meaning, so is the sporophytic phase. Among the sporophytic structures thus endowed with sex are flowers (“male,” “female,” “bisexual”), stamens (“male”), carpels (“female”), and even plants (“male” and “female”). The use of sexual terminology for sporophytic structures is, on occasion, even more ludicrous: in an otherwise eminently respectable journal I recently noted the terms “male sepal” and “male pedicel.”<sup>2</sup>

Sexual terminology for sporophytic structures is not only misleading, inconsistent, and inaccurate but also superfluous, referring to precisely the same concepts as do the following terms, which are, it seems to me, above

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<sup>1</sup> We *all* know about the Swedish attitude toward sex.

<sup>2</sup> To extend this absurdity even further, why not “male” or “female” vessel elements or stomates. And one might wonder if, at the base of a plant that bears “male pedicels,” one might find “male roots.”

reproach: staminate (“male”), carpellate (“female”), imperfect (“unisexual”), and perfect (“bisexual”).

By extension of the same reasoning (or lack of it) that permits the use of sexual terminology for flowers, the sporophytes of *Selaginella* and *Marsilea* could be called “bisexual” and the megasporangia and microsporangia of *Selaginella* could be called, respectively, “female” and “male.”

The correct and consistent use of sexual terminology for angiosperms will lead to increased exactness in one minuscule part of our taxonomic vocabulary. Taxonomy may never be an exact science but this does not excuse taxonomists from striving diligently for terminological precision.